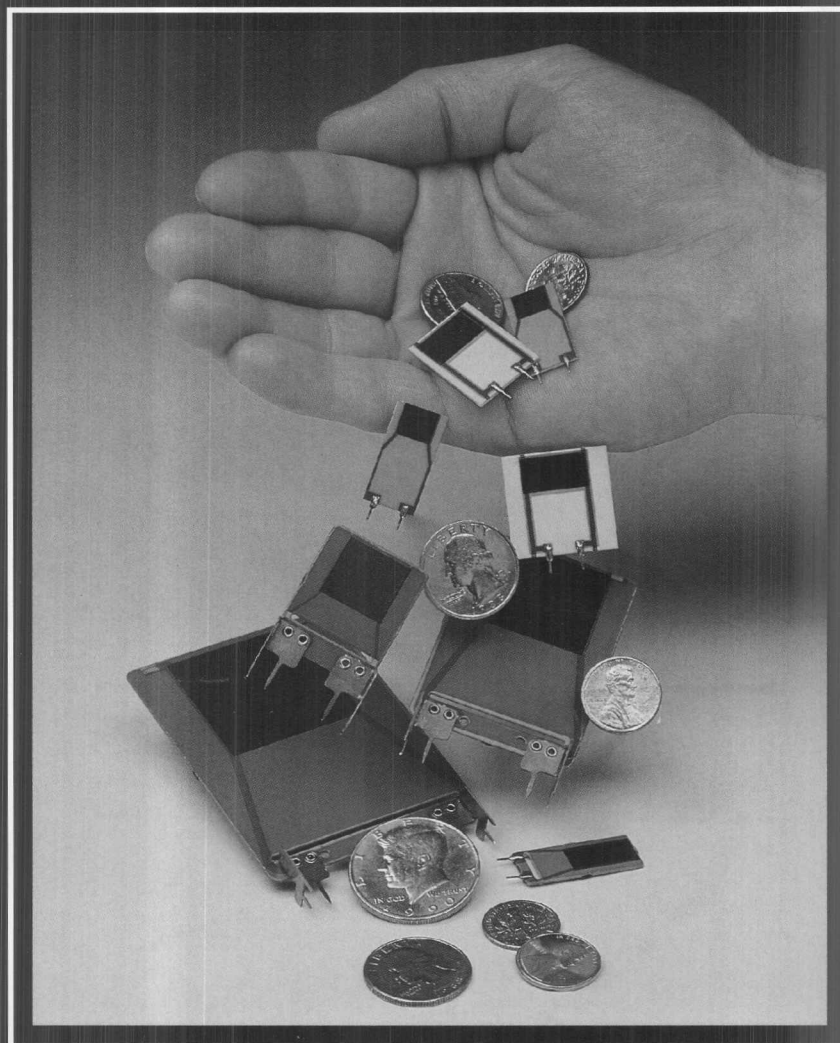


OHMITE®



Pecos®* and Power Chip® Resistors



**Porcelain Enamel Coating on Steel*

Pecos® Resistors

Porcelain Enamel Coating On Steel

1% and 5% Tolerances – Other Tolerances Available

FEATURES

- Extremely High Power Densities (20w/in²)
- Wide Resistance Range
- Non-Inductive

The Ohmite Pecos® Resistor is a thick film resistor. It is constructed on a Porcelain Enamel Coating On Steel substrate with copper plated silver conductors, ruthenium oxide resistance material, and a glass passivation layer. It is available in standard 1% and 5% resistance values from 1Ω to 250KΩ. (Other values are available on special order. Consult Ohmite Marketing Department for more information.) The resistors have very low inductance, on the order of 50nH measured at 1MHz. The thin profile and low inductance are specifically designed for switch mode power supplies. Repetitive transient withstand capability is 5 times peak as long as the one second average dissipation remains equal to or less than rating.

SPECIFICATIONS

MATERIAL

Substrate: PECOS®

Resistor: Ruthenium Oxide

Coating: Glass

Terminals: Solder Plated Brass

Thermal Conductivity:
60 Watts/Meter/°C

Temperature Coefficient:
1 to 100Ω 100 ppm/°C
101 to 10KΩ 50 ppm/°C
10KΩ and up 100 ppm/°C

ELECTRICAL

Tolerance: ±1% and ±5%
(other tolerances available).

Power rating: Based on 25°C free air with linear derating to "0" at 350°C.

Maximum Operating Voltage:
350 VAC, 500 VDC through glass; 1000 VAC, 1500 VDC through substrate

Overload: 5 times rated power
Δ R: +2%, 2000 hours

Power Rating Watts	10	20	50	100
Average Weight	2.5 gms	5.5 gms	16 gms	32 gms

HOW TO ORDER

EXAMPLE:

20 watt, 47,000 ohms, 5% Resistor, Planar Package

TC020PA47K0J

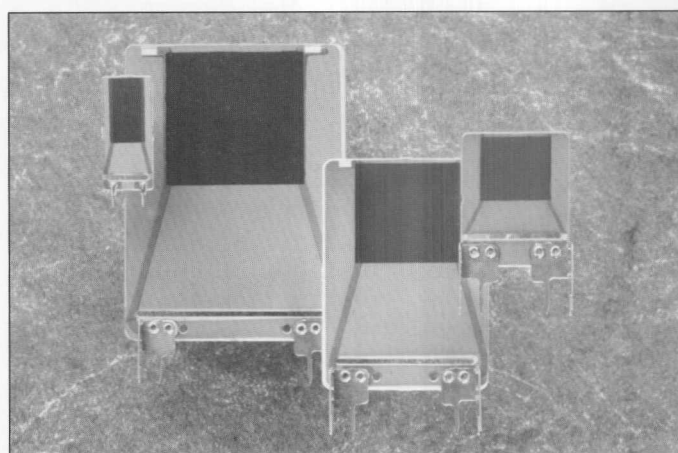
Series

Power Rating:
010 = 10 Watts
020 = 20 Watts
050 = 50 Watts
100 = 100 Watts

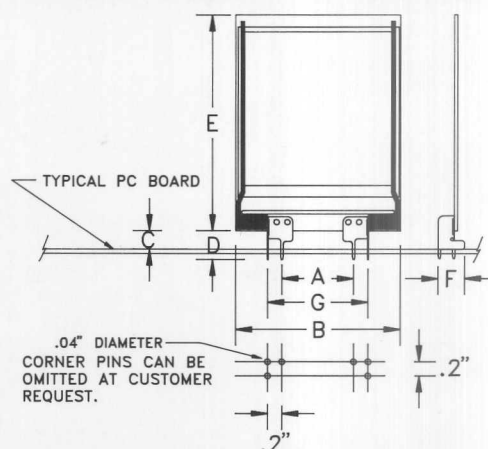
Tolerance
K = 10%
J = 5%
F = 1%
D = 0.5%

Resistance Value (ohms)
0.25(min) = R250
1.0 = 1R00
10.0 = 10R0
100 = 100R
1000 = 1K00
10,000 = 10K0
100,000 = 100K
1,000,000 = 1M00

Package:
P = Planar
U = U-Shaped
S = Special
Package Modifier:
A, B, Sequential

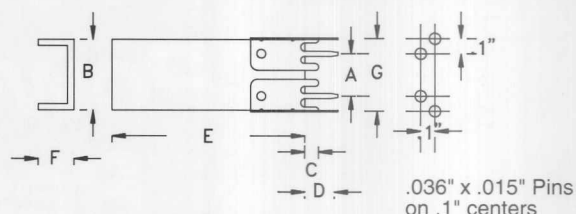


DIMENSIONS



PLANAR PECOS

Power Rating Watts		A	B	C	D	E	F	G
10	in	.30	.50	.07	.17	1.25	.10	—
	mm	7.62	12.70	1.78	4.32	31.75	2.54	—
20	in	.60	1.0	.28	.41	1.25	.47	1.0
	mm	15.24	25.40	6.99	10.41	31.75	11.94	25.40
50	in	1.0	1.6	.28	.41	2.25	.47	1.4
	mm	25.40	40.64	6.99	10.41	57.15	11.94	35.56
100	in	1.3	2.3	.28	.41	3.05	.47	1.70
	mm	33.02	58.42	6.99	10.41	77.47	11.94	43.18



U SHAPE PECOS

Power Rating Watts		A	B	C	D	E	F	G
20	in	.300	.50	.28	.41	1.35	.25	.53
	mm	7.62	12.70	6.99	10.41	34.29	6.35	13.46
50	in	.65	.85	.28	.41	2.4	.35	.85
	mm	16.51	21.59	6.99	10.41	60.96	8.89	21.59

NOTE: Consult Ohmite Marketing for all U Shape Applications

Power Chip® Resistors

Alumina Substrate – Thick Film Resistive Ink Resistors

1% and 5% Tolerances – Other Tolerances Available

FEATURES

- Lightweight, Economical
- High Power Density
- Wide Resistance Range
- Non-Inductive

The Ohmite Power-Chip® Resistor is a thick film resistor. It is constructed on an alumina substrate, with copper plated silver conductors, ruthenium oxide resistance material, and a glass passivation layer. It is available in standard 1% and 5% resistance values from 1Ω to 250KΩ. (Other values are available on special order. Consult Ohmite Marketing Department for more information.) The resistors have very low inductance, on the order of 50nH measured at 1MHz. The thin profile and low inductance are specifically designed for switch mode power supplies. Repetitive transient withstand capability is 5 times peak as long as the one second average dissipation remains equal to or less than rating.

SPECIFICATIONS

MATERIAL

Substrate: 96% Al₂O₃

Resistor: Ruthenium Oxide

Coating: Glass

Terminals: Solder Plated
Brass

Thermal Conductivity:
20 Watts/Meter/°C

Temperature Coefficient:
1 to 100Ω 100 ppm/°C
101 to 10KΩ 50 ppm/°C
10KΩ and up 100 ppm/°C

ELECTRICAL

Tolerance: ±1% and ±5%
(other tolerances available).

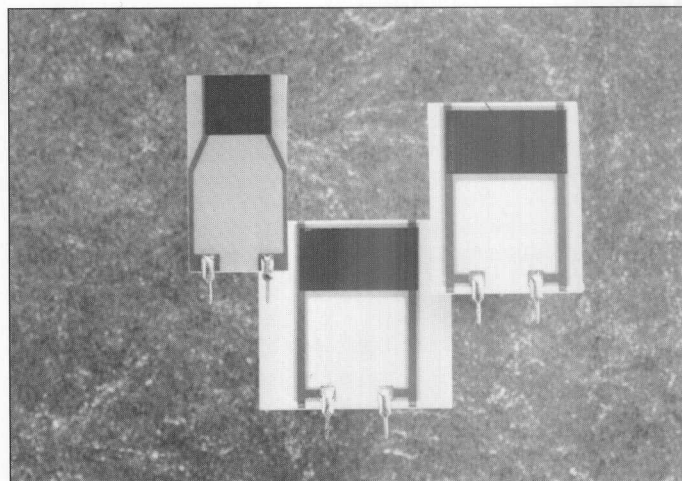
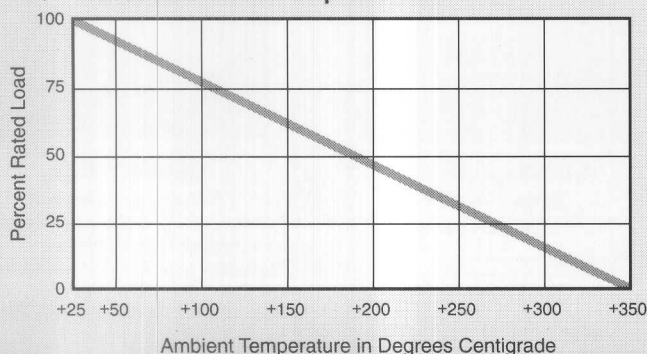
Power rating: Based on 25°C
free air with linear derating to
"0" at 350°C.

Maximum Operating Voltage:
350 VAC, 500 VDC through
glass 1000 VAC, 1500 VDC
through substrate

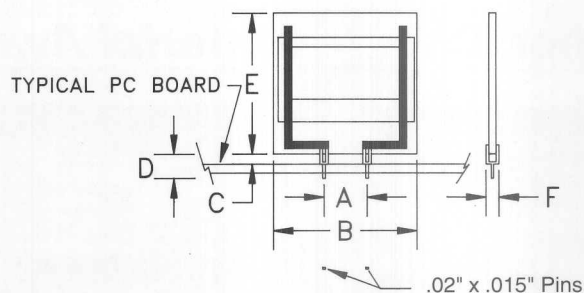
Overload: 5 times rated power
Δ R: +2%, 2000 hours

Power Rating Watts	5	7	10
Average Weight	1.5 gms	2.3 gms	3 gms

DERATING: Pecos and Power Chip Resistors



DIMENSIONS



POWER CHIP

Power Rating Watts		A	B	C	D	E	F
5	in	.300	.50	.07	.17	1.0	.10
	mm	7.62	12.70	1.78	4.32	25.40	2.54
7.5	in	.300	.75	.07	.17	1.0	.10
	mm	7.62	19.05	1.78	4.32	25.40	2.54
10	in	.300	1.0	.07	.17	1.0	.10
	mm	7.62	25.40	1.78	4.32	25.40	2.54

HOW TO ORDER

EXAMPLE:

5 watt, 1.00 ohm, 5% Resistor, Planar Package

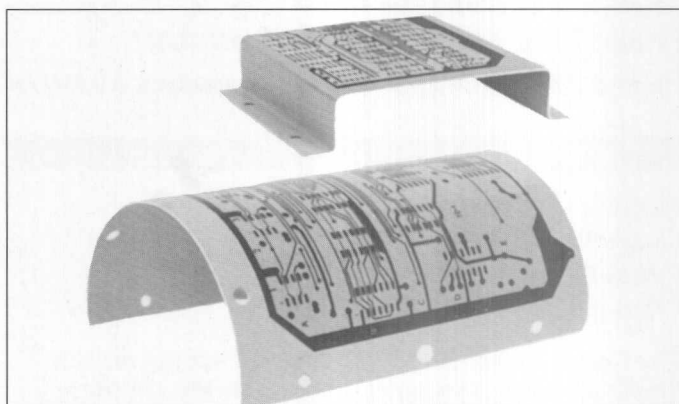
TA005PA1R00J	
Series	Tolerance
Power Rating:	K = 10%
005 = 5 Watts	J = 5%
007 = 7 Watts	F = 1%
010 = 10 Watts	D = 0.5%
Package:	Resistance Value (ohms)
P = Planar	0.25(min) = R250
S = Special	1.0 = 1R00
Package Modifier:	10.0 = 10R0
A, B, Sequential	100 = 100R
	1000 = 1K00
	10,000 = 10K0
	100,000 = 100K
	1,000,000 = 1M00

Pecos® Substrates

Pecos® substrates are available in production quantities in a wide variety of sizes and shapes. The process allows great flexibility in the placement of holes and complex shapes are possible. Present capabilities will allow substrate size up to 9" x 15". Through holes, insulated from the underlying substrate are easily accomplished in the process. Multiple resistors can be screened and adjusted on the substrate. Complex circuit patterns can be supplied. (Limited to screen print processing at the present time.)

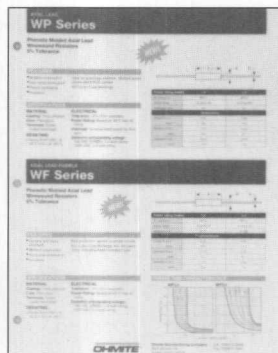
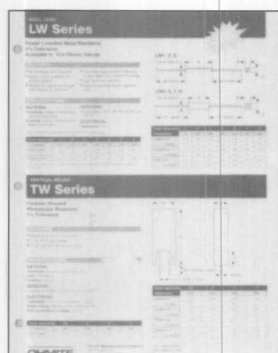
The basic advantage of the Pecos® substrate material compared to conventional alumina substrates are its superior heat transfer characteristics and complex shapes.

The thermal conductivity in Watts/Meter/°C is 60 for Pecos® and 20 for alumina. Roughly, this means that the Pecos® substrate material is three times as effective in spreading the heat as is alumina. The more even heat distribution over the entire substrate reduces hot spot temperatures. Basic specifications are the same as those described on the previous page for the Pecos® resistors.



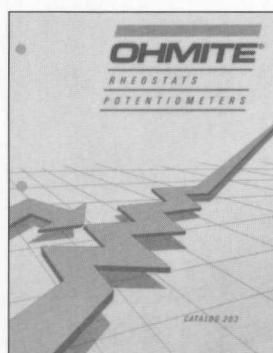
Due to the many possible variations in geometry and individual customer needs, Ohmite has chosen to quote individual requests for this exciting new material. Submit drawings to Ohmite Marketing for a quote on your exact needs.

Other Ohmite Material Available

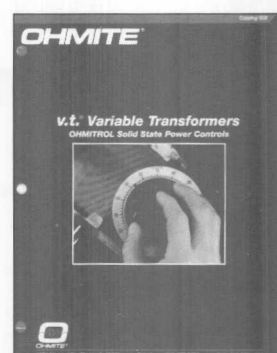


Datasheets

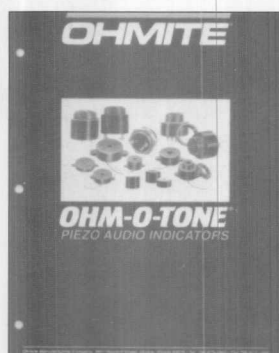
- LW Low Ohm Resistors
- TW Standup Ceramic Resistors
- VA Axial Lead Ceramic Resistors
- WP/WF Series Phenolic/Fusible Resistors



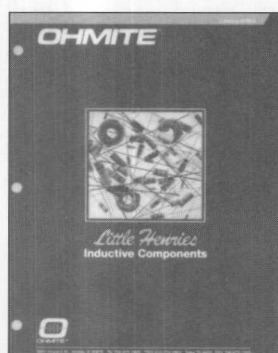
Catalog 203
Rheostats
Potentiometers



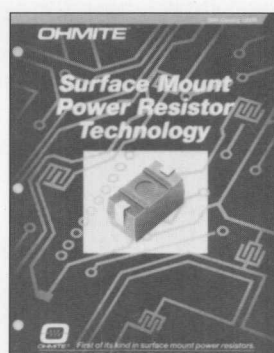
Catalog 502
v.t.® Variable Transformers



Catalog 1600 A
Ohm-O-Tone®
Piezo Indicators



Catalog 4100 A
Little Henries
Inductive Components



Catalog 1300B
Surface Mount
Power Resistors



Catalog 300L
Component Selector

Relays	Wirewound Resistors
Film Resistors	Potentiometers
Rheostats	Variable Transformers
Tap Switches	Trimmers and Chokes
Controls	Substitution Boxes

Engineering Reference Handbook available

OHMITE®